



# CTIA

*Building The Wireless Future™*

Cellular Telecommunications & Internet Association

February 11, 2003

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, Southwest  
12th Street Lobby, TW-A325  
Washington, DC 20554

**Re:** *Ex Parte* Presentation  
WT Docket No. 01-309

Dear Ms. Dortch:

On February 7, 2003, the Cellular Telecommunications & Internet Association (CTIA) represented by Jo-Anne Basile, Vice President for External and Industry Relations; Diane Cornell, Vice President for Regulatory Policy; Ron Barnes, Director for External and Industry Relations; Tim Harr, Senior Counsel, Motorola and Dr. Ken Joyner, former director of the EMC Section of the Telstra Research Laboratory (currently with Motorola Australia), met with Joel Taubenblatt, Blaise Scinto, Joe Levin, and Pat Forster of the Wireless Telecommunications Bureau and Margaret Egler and Gene Fullano of the Consumer & Governmental Affairs Bureau.

The purpose of the visit was to provide information from Dr. Joyner to the staffs of the Wireless and Consumer & Governmental Affairs Bureaus about Australia's approach to address interference experienced by hearing aids from digital wireless handsets. In his former position, Dr. Joyner led Telstra's research into digital wireless handset interference with hearing aids and was responsible for the mobile phone industry's cooperative efforts with the government's hearing aid research office dedicated to solving the hearing aid interference issue.

The Telstra Research Labs investigated a number of potential interference situations as the Australian GSM network was being rolled out and discovered problems with hearing aids and use of digital wireless handsets. Telstra informed the Australian government hearing aid agency, Australian Hearing, about these interference problems. Following considerable research conducted by Australian Hearing and Telstra, the Australian government implemented a solution to increase the immunity of hearing aids



to RF interference as opposed to making substantial mobile wireless handset or network modifications. From the research a standard was developed for hearing aid immunity levels, described in detail below. Telstra also investigated the possibility of modifying handsets, but concluded that no significant modifications could be made without affecting phone performance and roaming capabilities on other networks.

The hearing aid immunity standard -- Australian Standard AS/NZS 1088.9-1995 - has two levels, bystander (C1) and near field (C2). For the bystander level, hearing aids are designed to be immune to RF signals at a field strength of 10 volts/meter at a distance of one meter. A second level in the standard prescribes near-field immunity levels of 150 volts/meter for use of a wireless phone at a person's ear.

During this timeframe Australian Hearing was designing its own hearing aids and, at the time, provided purchase support for nearly 80 percent of the hearing aids sold in Australia. As a result, the agency had a significant influence on the hearing aid market in Australia. In order to address the RF interference situation, Australian Hearing incorporated bystander immunity levels as prescribed by the standard into the specifications for the hearing aids it designed. The private manufacturers who constructed Australian Hearing's hearing aids also used these immunity levels in the aids that were made for the retail market. The Therapeutic Goods Administration in Australia mandated use of the bystander immunity level in the standard for hearing aids in Australia.

Hearing aid manufacturers have been able to achieve the mandated immunity levels through easily accomplishable engineering design modifications such as circuit board layout modifications, use of advanced dynamic microphones, shortening wire lengths, and adding bypass capacitors. Beyond the initial engineering design required, these changes have had a *de minimus* cost effect on hearing aids. These modifications have also had other benefits to hearing aid wearers by eliminating or reducing interference from other sources of ambient RF energy. The result of the efforts in Australia is that hearing aids have achieved significant levels of immunity, and the interference problem for Australian hearing aid users has been dramatically reduced and is on its way to elimination. So today, the vast majority of hearing aid users in Australia are able to successfully use digital handsets.

The Australian government recognized that there was no "one size fits all" solution and that user experiences were different with the two digital networks in Australia, so the government issued a consumer information bulletin to assist hearing aid wearers in buying and using a wireless phone. Among recommendations made to hearing aid wearers are: consumers should try both networks, give consideration to the style of phone (e.g. one that places some distance between the antenna and the hearing aid versus one that does not), use accessories such as hands-free attachments and inductive neck loops, and try phones in the store before purchasing.

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Australia adopted a functional and understandable solution to the problem of hearing aids experiencing interference from digital wireless phones. While the specific circumstances in Australia and the U.S. are different there are points relevant to the situation here. First, the Australian experience highlights the benefits of hearing aid/mobile phone industry cooperation to identify and solve the immunity problem for hearing aids and second, there are benefits in providing detailed information to all stakeholders.

Pursuant to Section 1.1206 of the Commission's Rules, this letter is being filed with your office. If you have any questions concerning this submission, please contact the undersigned.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Ron Barnes', with a stylized, cursive script.

Ron Barnes  
Director for External & Industry Relations